

AMENDED CLAIMS

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original claim 1 amended; remaining claims unchanged (1 page)]

1. (amended) A gas cap actuator system (10, 10') which actuates automatic closing and opening of a gas cap (26, 26', 26'', 74) on a fuel spout (34, 52), the system having :
 - c. a gas cap (26, , 26', 26'', 74); and
 - d. a cap actuator (16, 20, 48, 48', 72) actuated by a drive train powered by a non-manual power source (12, 12') via entrainment with an annular fixing element (20, 78), the fixing element interfacing with the gas cap (26, , 26', 26'', 74) via an interface (39, 76) thereby enabling the cap actuator, when powered, to impart relative rotation between the gas cap and a fixing element (20, 78), thereby drawing the cap into engagement with the fuel spout (34, 52), the interface and the gas cap being manually disengageable in a manner that, when the cap actuator is not powered, the gas cap is removable by ordinary manual rotation by an operator.
2. The gas cap actuator system (10, 10') of claim 1, wherein the non-manual power source is selected from a group of non-manual power sources including electrical, pneumatic, and hydraulic power sources (12, 12').
3. The gas cap actuator system (10) of claim 1 wherein the fixing element is a driveable ring (20) having a diameter greater than the diameter of the filling tube (34) and disposed so as to slidably and rotatably fit around an end of the fuel spout (34), which the non-manual power source (12) actuates to rotate about an end of the fuel spout (34) so that when the gas cap is properly aligned with the ring, the ring draws the gas cap into sealing engagement with a rim (97) of an opening of the fuel spout (34) so as to seal the gas cap.
4. The gas cap actuator system (10') of claim 1, wherein the fixing element is a worm gear (66) having a hub (72) which engages with the cap (74) so as to be able to rotate the cap.
5. The gas cap actuator system (10, 10') of claim 1 wherein the cap (26, 26', 26'', 74) is retractably attached to a fueling door (46, 62) in a manner so as to permit manual removal of the cap from the door.
6. The gas cap actuator system (10') of claim 4, wherein a worm and worm gear arrangement (16', 66) drives the cap actuator (72) in a clockwise or counterclockwise direction.